UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/555,403	11/02/2005	Andrei Radulescu	NL 030481	9478

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EXAMINER
COLEMAN, ERIC

ART UNIT	PAPER NUMBER
2183	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/555,403	RADULESCU ET AL.
	Examiner	Art Unit	
	Eric Coleman	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO. EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *6/4/07*.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public
> use or on sale in this country, more than one year prior to the date of application for patent in the United
> States.

2.   Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by

Wingard (patent No. 6,182,183).

3.   Wingard taught the invention as claimed including a data processing ("DP")

system comprising(as per claim 1): Split protocol transmission method (e.g., see col. 2,

lines 18-25) for transmitting data and a communication thread identifier for said data

along a communication path from a source functional unit (SFU) to a destination

functional unit (DFU) (e.g., see figs. 1,4,5,col. 3,lines 8-22 and col. 4, lines 20-46),

wherein in the communication path a data consuming functional unit (CFU) and a data

producing functional unit (PFU) directly communicate to each other by means of a

handshake procedure (e.g., see col. 13, lines 3-12) wherein the data consuming

functional unit (CFU) indicates a communication thread identifier (TID) to the data

producing functional unit (e.g., see col. 13, lines 42-55) and the data producing

functional unit provides data related to said communication thread identifier to said data

consuming functional unit (e.g., see col. 13,lines 13-18).

4.   As per claim 2, Wingard taught the data producing functional unit (PFU) indicates

(ACCEPTP) when it has accepted the communication thread identifier [ReqAccept](e.g.,

see col. 13, lines 3-13 and col. 13, lines 42-55)[in the embodiment where the request

thread ID is used the Respthread ID is taught as being required where each identifies

the current thread number and the Respthread is required to identify the threads

command is being responded to such as when a read is to a slave device which is the

data producer].

5.   As per claim 3, Wingard taught the data producing functional unit accepts the

communication thread identifier within a fixed number of cycles (e.g., see col. 9, lines 1-

15)[the bus transactions are predetermined and ordered and each is required to

complete in a predetermined number of cycles also the number of cycles take for the

request/response transaction is predetermined at time of system implementation based

on operating frequency and module latencies and in the embodiment that uses the

thread ID the thread ID is required with the communication (e.g., see col. 13, lines 42-

55)].

6.   As per claim 4, Wingard taught the data consuming functional unit (CFU)

indicates (ACCEPTC) when it has accepted the data from the data producing functional

unit (PFU) (e.g., see col. 13, lines 1-13)[when a slave has received and accepted the

data to be transferred and the request transaction data already transferred the

ReqAccept is transmitted by the consuming slave in a write transaction to the slave].

7.   As per claim 5, Wingard taught the data consuming functional unit (CFU) accepts

the data from the data producing functional unit (PFU) within a fixed number of clock

cycles (e.g., see col. 9, lines 1-15))[the number of cycles take for the request/response

transaction is predetermined at time of system implementation based on operating

frequency and module latencies].

8.   As per claim 6, Wingard taught the data producing unit (PFU) provides

information indicating whether the one of the following situations exist, the data

consuming functional unit (CFU) has to continue indicating the communication thread

identifier (TID) (e.g. see col. 13, lines 62-67)[the data producing slave indicates to the

data consuming master the data producing slave is busy and therefore the master is

required to later send the request when the slave was ready for a read], the indicated

communication thread identifier (TID) is accepted [ReqAccept](e.g., see col. 13, lines 3-

13 and col. 13, lines 42-55)[in the embodiment where the request thread ID is used the

Respthread ID is taught as being required where it identifies the current thread number

and the Respthread is required to identify the threads command is being responded to

such as when a read is to a slave device which is the data producer].

, the second functional unit (CFU) is requested to indicate an other communication

thread identifier[(e.g,. see col. 13, lines 56-66)[sending the busy single indicates to the

other functional unit that the busy functional unit cannot accept a request and therefore

the other functional unit is to later send a request with the required thread ID].

9.   As per claim 7, Wingard taught a further handshake procedure wherein

information is exchanged from the data producing functioning unit (PFU) to the data

consuming functional unit (CFU) to exchange communication thread information, the

further handshake procedure being independent of the handshake procedure defined in

claim 1(e.g., see col. 13, lines 1-18 and col. 13, lines 24-67).

10.   As per claim 8, Wingard taught the data producing functional unit (PFU) provides

a thread acceptation signal (ACCEPTP) when it has accepted the indication for the

communication thread (TID), and defers providing data until after it has provided the

thread acceptation signal[ReqAccept](e.g., see col. 13, lines 3-13 and col. 13, lines 42-

55)[in the embodiment where the request thread ID is used the Respthread ID is taught

as being required where each identifies the current thread number and the Respthread

is required to identify the threads command is being responded to such as when a read

is to a slave device which is the data producer] [further with the busy signal sent when

the slave cannot accept a transaction the Wingard system defers providing data until it

is ready and has provided the thread acceptation signal (e.g., see col. 13, lines 24-67

and col. 13, lines 1-18).

11.   As per claim 9, Wingard taught a processing system comprising a plurality of

functional units the processing system being arranged to transmit data and

communication thread identifier for said data according to a split protocol (e.g., see col.

2, lines 18-25) along a communication path from a source functional unit (SFU) to a

destination functional unit (DFU) (e.g., see figs. 1,4,5,col. 3,lines 8-22 and col. 4, lines

20-46), a data consuming functional unit (CFU) and a data producing functional unit

(PFU) in the communication path being arranged to directly communicate to each other

by means of a handshake thread identifier (TID) to the data producing functional unit

(e.g., see col. 13, lines 3-12 and col. 13, lines 42-55) and the data producing functional

unit provides data related to said communication thread identifier to said data

consuming functional unit(e.g., see col. 13,lines 13-18).

12.   As per claim 10, Wingard taught the data consuming functional unit is an

application specific processor (ASP) capable of scheduling tasks based on incoming

read data (e.g., see fig. 12 and col. 13, lines 1-67)[The consuming master can send a

respthreadbusy signal when is cannot take any response (e.g., on reads) associated

with certain threads, this schedules the tasks based on incoming read data as the

thread ID is taught in one embodiment as incoming data required for the read

transaction].

13.   As per claim 11, Wingard taught the data consuming functional unit is a memory

controller (DRAM controller 1208) comprising a scheduler for providing indications of

communication thread identifier in an order which reduces memory access time (e.g.,

see fig. 12 and col. 13, lines 1-67 and claim 15 lines 1-52)[read and write transactions

are decoupled so they can be performed concurrently reduces memory access time

where in the example, a read can be performed without waiting for a long latency write

(e.g., see col. 13, lines 13-32)].

Response to Arguments

The rejections as set forth in the last office action are hereby maintained.

Applicant's arguments filed 6/4/07 have been fully considered but they are not

persuasive.

In the remarks applicant argues in substance that <u>Wingard did not teach data</u>

<u>consuming functional unit (CFU) indicates a communication thread identifier (TID) to</u>

the data producing functional unit and the data producing functional unit provides data related to the communication thread identifier to the data consuming functional unit as allegedly shown in fig.2 of the present application. As to this argument the Examiner contends that Wingard taught the claimed invention as follows: Wingard taught an embodiment with the use of thread identification send both from the master to the slave (ReqThreadID) and from the slave to the master RespThreadID (e.g., see fig. 11 and col. 12, line 43-col. 13, line 67). These thread Ids necessarily would have been the same because the Wingard taught the thread ID sent from the slave to the master was used to indicate which thread's command is being responded to. Therefore for any transaction in this embodiment thread ID is sent both from a consumer to a producer and from a producer to the consumer. Wingard taught write transactions where data from the master is written to the slave and read transactions where data is read from the slave and transmitted to the master. Therefore in a write transaction data related to the thread ID is sent from the producer to the consumer (i.e., the master to the slave). Also in a read transaction the producer would have been the slave and the consumer would have been the master. Also, in each transaction (read and/or write) a thread id is sent both from the producer to the consumer and from the consumer to the producer to ensure that the data for correct thread is being sent especially when there is a delay in the communication(e.g., see col. 13, lines 42-65). Therefore, clearly the Wingard teachings meet the claimed limitations.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Coleman whose telephone number is (571) 272-4163. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EC

ERIC COLEMAN
PRIMARY EXAMINER